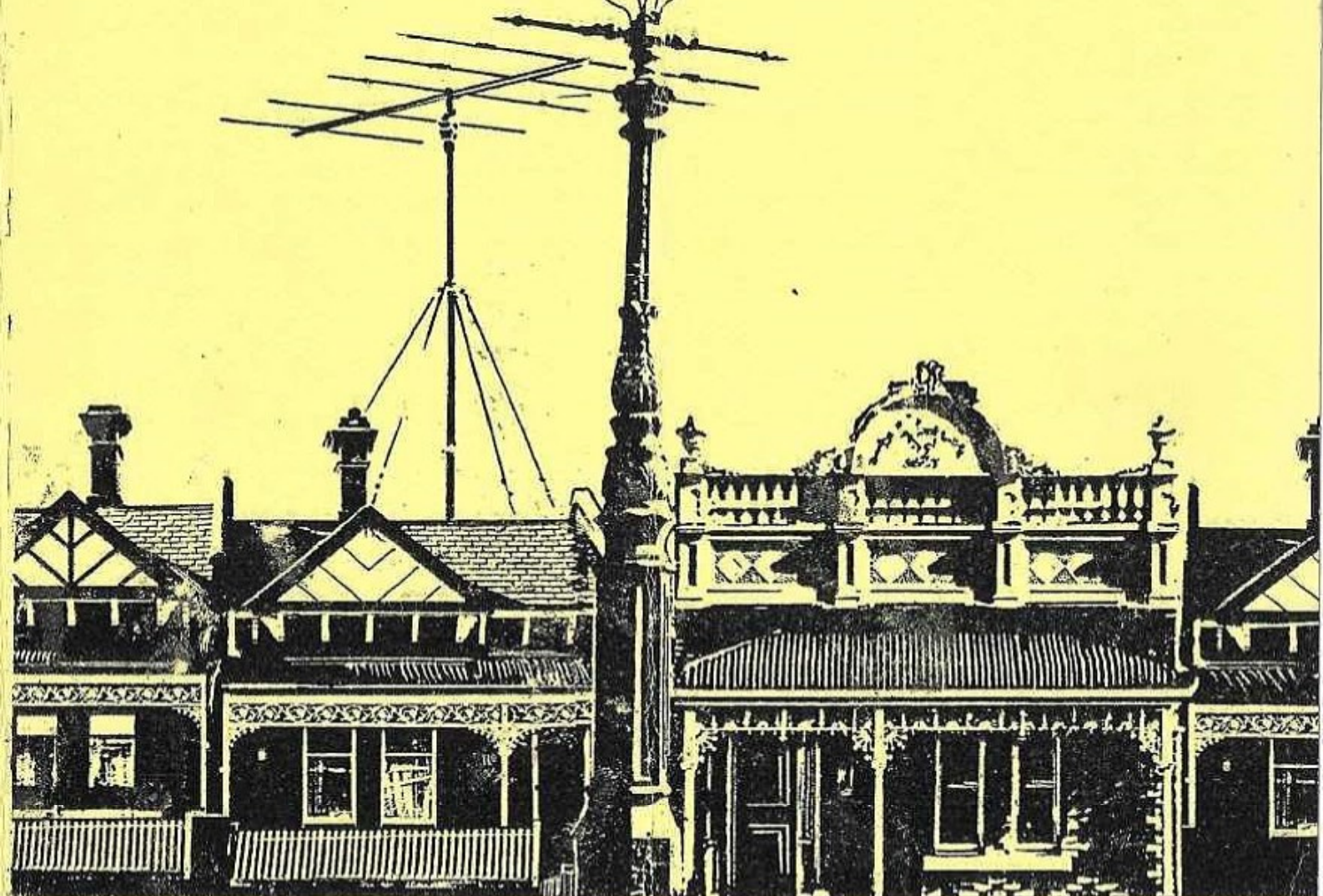


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B·A·R·G NEWS

FEB. 86



© Monthly Newsletter of the
Ballarat Amateur Radio Group

86/02

COMMITTEE

B.A.R.G. OFFICERS 1985-1986

			<u>HOME</u>	<u>BUSINESS</u>
President.	Lou Iaquinto.	VK3 DFI	49 2200	Ext.241 After 4.30
Vice President	Geoff Smith.	VK3 ADB	32 1037	
Secretary	Jim Wright.	VK3 CFB	32 7563	
Asst. Secretary	Dick Forrester.	VK3 VU	35 7663	39 1001
Treasurer	Harry Hekkema.	VK3 KGL	35 7563	39 1001
Technical Officers	Phil Seddon	VK3 AQM	31 5220	31 3166
	Ian Robinson.	VK3 BTX	32 4139	
	Maurie Batt.	VK3 XEX	42 2245	
	Dick Antosiewicz.	VK3 AEX	32 3273	31 1818
Q.S.L. Manager	Cliff Bilston.	VK3 PAF	35 8048	
Awards Manager	Maurie Batt.	VK3 XEX	42 2245	
Publicity Officer	John Hazledine.	VK3 CFH	39 1971	
Education Officer	Bob Terrill.	VK3 BNC	39 5317	39 1001
Property Officer	Dick Antosiewicz.	VK3 AEX	32 3273	31 1818
Newsletter Committee.	Dick Forrester.	VK3 VU	35 7663	39 1001
	Fred Quick.	VK3 NIH	32 3216	32 6455
	Ron Watkins.	VK3 XOA	35 6017	32 1447
	Henry Moritz.	VK3 DXC	35 5130	
Net Co-ordinator	Fred Quick.	VK3 NIH	32 3216	32 6455
W.I.C.E.N. Committee	Dick Antosiewicz.	VK3 AEX	32 3272	31 1818
	Geoff Smith.	VK3 ADB	32 1037	
	Dick Forrester.	VK3 VU	35 7663	39 1001
Committee	Neil Davidson.	VK3 KQQ	35 9812	
	Peter Kenyon.	L30037		
	Evonne Wroe.		42 4376	

B.A.R.G. Meets the LAST FRIDAY of every month at the
 BALLARAT EDUCATION CENTRE, Hopetoun Street. at 7.30 p.m.
 All Correspondence to P.O. Box 216E Ballarat East. 3350 Vic.

Awards Manager, VK3-XEX, R.S.D. Rokewood Junction. Vic.

Minutes of General Meeting held on 31st January.86.

MEETING OPENED at 8.00pm by President Lou DFI.

APOLOGIES XOA.CFH.NQQ.BNC.AXH.WN.CUH.PFF.NIZ.SE.

MINUTES of previous meeting held over owing to no News Letter.

CORRESPONDENCE IN from Begonia Car Rally Director requesting help with communications at rally on 1st March.

BUSINESS ARISING Moved AEX seconded DOK that Club participate. and the following members offered to assist;- ADB, VU, AAI, NFZ, DIE, DFI, YMW, DOK.

TREASURERS REPORT General a/c \$126.82. VS&L a/c \$1131.01. Outstanding accounts passed for payment.VU/KQF.

QSL MANAGER Cliff PAF reported 181 cards in and 231 out.

AWARDS MANAGER Maurie XEX reported that in the last 3 months he has sent out 7 DX Widows, 6 Goldrush and 7 Western Distri

CLUB NET Co-ordinator Fred reported that the net resumed on 30th January after christmas break.

PROPERTY OFFICER Dick AEX stated that all property is in good order but a co-ordinator is needed to assist with the John Moyle weekend as he will not be available.

REPEATER COMMITTEE Dick VU reported that work on the new repeater at Smeeton was progressing well, unfortunately work on the controller board has been held up owing to the Ham carrying out this work being sick and official permission to use the site has not yet been received in writing.

HAMVENTION REPORT Dick V.U.presented a cheque for \$1750.00 to the Club this being for profit from the last two Hamventions.Dick also asked members to give thought to having a further Hamvention in 1986 in which case a Convener should be appointed at the next meeting.A vote of thanks was passed with acclamation for Kevin WN and all the members of his committee which did a sterling job and also the Ladies whos help was invaluable.

GENERAL BUSINESS. Moved AAI seconded KQQ that the Club make a donation of \$20 to the Dennis Reedman Trust Fund. This is an appeal to try to re-imburse Mr.Reedman for some of his legal costs spent trying to get permission to erect a tower.He won the case and this court decision should help many other Hams who are having problems.

MEETING CLOSED at 8.50pm and members then watched a very educational Vidio on Ham Radio according to Tony Hancock courtesy of Ian BTX. Thanks Ian.

***** 73s Jim.CFB.

NEXT GENERAL MEETING February 28th.

COMMITTEE MEETING March 19th.

W.I.A.Western Zone meeting 22nd March at Lake Bolac Hotel. 1.30pm.

86/02

B.A.R.G. LADIES COMMITTEE

CHRISTMAS DINNER.

On the 12th December, 1985 a most enjoyable evening was held at the, Western Hotel. Approx., 27 people attended.

CHRISTMAS B.B.Q.

The Buninyong Gardens was the scene for our B.B.Q. Some 30 people attended. One third of these from Geelong. Adults and children had a great day.

LADIES ONLY NIGHT.

Mixing business with pleasure was the call of the evening. Ladies dining out at the 'Canton Palace'.

Meeting opened aprox., 7.15p.m.

Apologies:- Jan, Yvonne, Kim, Ingrid.

Present:- Marj, Pearl, Karen, Gwen, Betty, Marsha, Maggie & June.

A meeting was held to discuss the preparations for the Beggars Banquet, to be held at:- Gwen Davidson's 7p.m.
10 Rowlands Street, 22nd February,
Sebastopol. B.Y.O. Refreshments,
\$5.00 per family.

The Menu for the Beggar's Banquet was discussed and finalised.

Meeting closed approx., 7.45p.m.

Then we got down to the serious business of our MENU for the evening.

J.F. Secretary.

CLUB MEETINGS 1986.

	<u>Committee</u>	<u>Club.</u>
January.	Wednesday 22nd.	Friday 31st.
February.	Wednesday 19th.	Friday 28th.
March.	Wednesday 19th.	To be decided.
April.	Wednesday 16th.	Friday 23rd.
May.	Wednesday 21st.	Friday 30th.
June.	Wednesday 18th.	Friday 27th <u>A.G.M.</u>
July.	Wednesday 16th.	Friday 25th.
August.	Wednesday 20th.	Friday 29th.
September.	Wednesday 17th.	Friday 26th.
October.	Wednesday 22nd.	Friday 31st.
November.	Wednesday 19th.	Friday 28th.
December.	No Meetings.	

85/02
86/02

05

REPEATER REPORT

As with all best laid plans the construction of the new repeater has struck a few snags but as of today (Feb 18th) we seem to be moving along once again. The following is a list of what has been achieved to date:

- (a) Controller board has been designed and now is only awaiting the completion of the circuit board artwork (In hand VK3AEX)
- (b) Power supply in final stage of assembly (In hand VK3WN)
- (c) Cavities almost complete (assembly only required) Once assembled they only need tuning. (In hand VK3VU)
- (d) Site approval and licensing (In hand W.I.A. Melbourne)
- (e) Construction of container to hold cavities (VK3ADB)
- (f) Modification of FM828 is complete.
- (g) Installation of heater and associated wiring in steel cabinet (in hand W.I.A. Melbourne)
- (h) Helix for antenna (arrived)
- (i) Double shielded co-ax for cavities has been obtained.
- (j) The antenna has been obtained and will be delivered along with the steel cabinet when ready.

BEACON REPORT

The installation and re-alignment of the beacon is in hand with Les VK3ZBJ in Melbourne and we expect to have it returned soon. We are awaiting approval from D.O.C. for operation on its new frequency (432.535 MHz). This I anticipate to occur soon. We are also going to try a different location as soon as it arrives back. This will also need approval when a permanent location is decided upon.

PROPOSED 432 MHz REPEATER

The club has obtained an FM 747 transceiver as the basis for a proposed UHF repeater. As yet there has been no progress towards construction or D.O.C. approval but things will move along as soon as we have some progress on the VHF repeater. It will use the same controller board as the VHF repeater making maintenance much easier.

electronic aerial switch

simple and
loss-free

from an idea by
C. Abegg

Many radio- and TV-amateurs have often wished they had a simple means of switching from one aerial to another. The normal solution is to do this by means of plug and socket arrangements, because a loss-free switch for changing aerials is not as simple as it sounds. This article shows that aerial switching is possible without introducing losses into the signal paths.

1

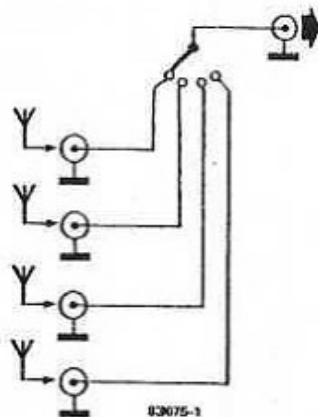


Figure 1. At medium- and short-wave frequencies, a normal switch can be used, but this would not be satisfactory at VHF and UHF.

2

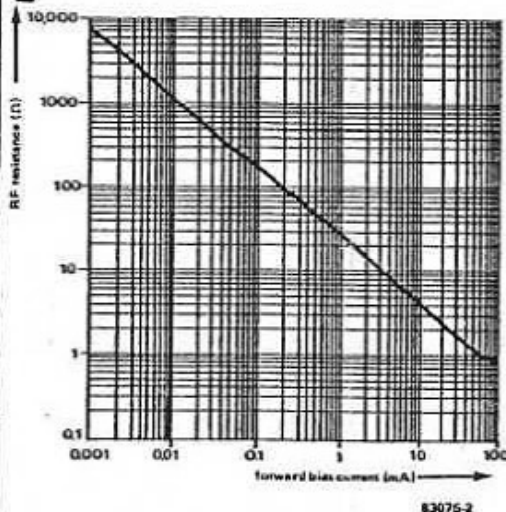


Figure 2. Characteristic of RF resistance vs forward bias current of a typical PIN diode.

The problem revolves around the losses caused by a mechanical switch. At relatively low frequencies (medium- and short-wave) such losses are not serious, but in the VHF and UHF bands they become a nasty problem. Even so, the most obvious and by far easiest way of selecting one of a number of aerials is by means of a mechanical switch as shown in figure 1.

There is, however, a means of obviating the disadvantages of a mechanical switch at high frequencies and that is by using PIN diodes which are ideal for this purpose.

PIN diodes

What are PIN diodes? Briefly, they are special switching diodes of which the most important property is a very low self-capacitance while at high frequencies they are virtually purely resistive. The resistance can be varied between 1 and 10,000 Ω by means of a direct current, the so-called forward bias current, as shown in figure 2. It is clear from this figure that the resistance of such a diode changes linearly over a wide range of values of current. This characteristic is ideal for a number of applications: by varying the forward bias current, the PIN diode can be used for the attenuation, equalisation or even amplitude modulation of high frequency signals; by switching the forward bias current, pulse modulation and phase-shifting of high frequency signals becomes feasible.

In the aerial switch described here, the PIN diodes are used in a simple way: as a high frequency switch. The forward bias current is set relatively high and, apart from this current, the only requirement is a switch. Figure 3 shows how this works: when the switch is closed, the diode conducts; when the switch is open, the diode is cut off.

Circuit description

Using PIN diodes, the switching between four aerials does not, therefore, present a real problem. All that is required is a current supply, a 4-position switch and four PIN diodes (see figure 4).

In practice, there is, of course, a little more to it, but not much, as can be seen from the complete circuit diagram in figure 5. The required forward bias current can be obtained from a normal +12 V supply (mains transformer, bridge rectifier and stabiliser IC, for instance). LEDs D5 ... D8 are connected in series with the supply to give a ready indication which aerial has been switched in.

Depending upon the position of switch S1, the forward bias current first passes through one of the LEDs, subsequently through one of the chokes L1 ... L4, then through the relevant PIN diode (D1 ... D4) and finally to earth via choke L5 and resistor R1. This latter resistor determines the value of the current; at 680 Ω , as in figure 5, the current is 15 mA which is sufficient to ensure reliable switching of the diodes and satisfactory lighting of the LEDs.

Capacitors C1 ... C4 and C9 are necessary

to prevent DC appearing at the input and output of the circuit. Chokes L1 ... L5 prevent the HF signal leaking to earth via the power supply line. Capacitors C5 ... C8 decouple the power supply line for HF. Resistors R2 ... R5 ensure that the anodes of the diodes not in use are earthed so that mixing of the various aerial signals is impossible.

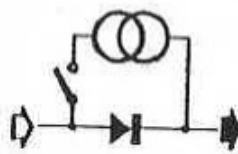
Construction

In view of the small number of parts, the construction of the electronic aerial switch is a fairly simple matter. The only point which needs watching is that all wiring must be kept as short as possible to ensure satisfactory operation.

Chokes L1 ... L5 can be wound on a ferrite bead: using enamelled copper wire of 0.3 mm diameter, two turns will suffice for UHF and five for VHF inputs. It is, of course, possible to buy them ready-made: 1 μ H is required for UHF and about 5 μ H for VHF.

The circuit has been designed for aerial input impedances of 50 ... 75 ohms. Isolation between the various inputs is not less than 30 dB. Although the loss caused by switch S1 is minimal, the PIN diodes will deteriorate the noise factor of the receiver a little, but this will not be more than 1 dB.

3



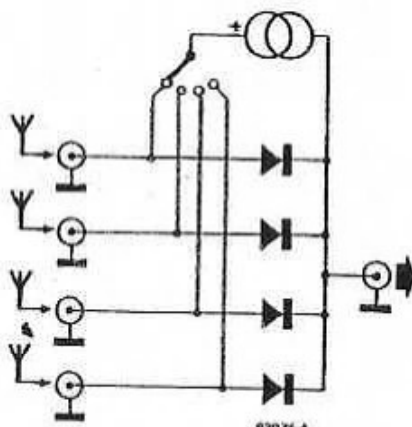
83075-3

electronic aerial switch
elektor June 1983

85/02
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86/02

Figure 3. Principle of PIN diode switch.

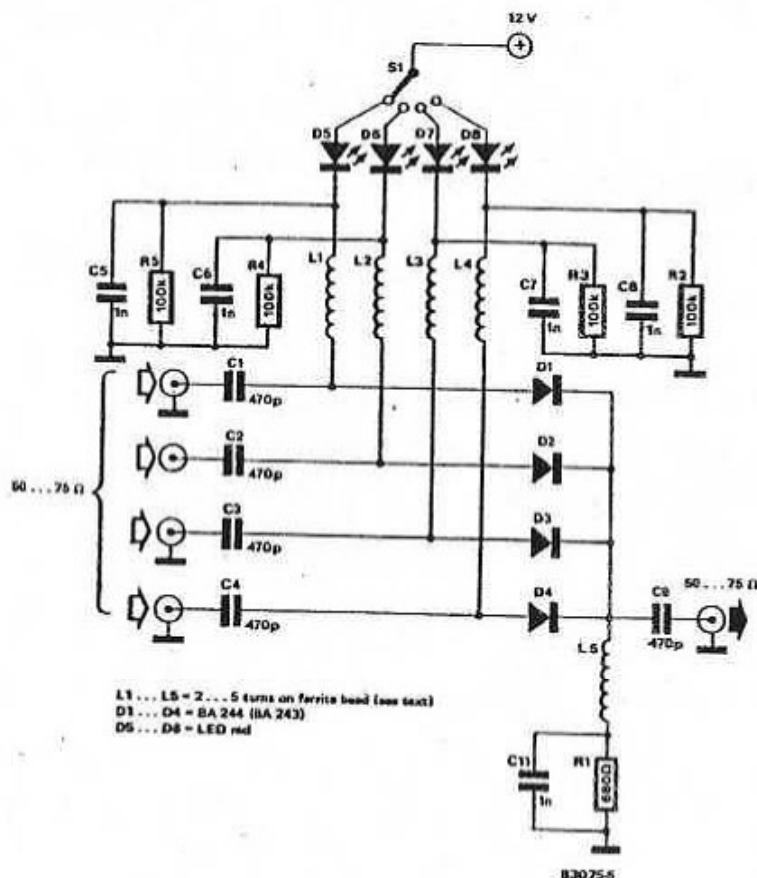
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83075-4

Figure 4. Aerial switch using PIN diodes. With the use of a 4-position switch and a power supply, one of the diodes can be switched on as required.

5



83075-5

parts list

Resistors:

R1 = 680 Ω
R2 ... R4 = 100 k

Capacitors:

C1 ... C4,
C9 = 470 p ceramic
C5 ... C8,
C11 = 1 n ceramic

Semiconductors:

D1 ... D4 = PIN diode
BA 244
D5 ... D8 = LED,
red, 5 mm

Chokes:

L1 ... L5 = see text

Miscellaneous:

S1 = switch, 1-pole,
4-way
aerial input and
output connectors

Figure 5. Complete circuit of the electronic aerial switch. LEDs D5 ... D8 indicate which aerial has been switched in.

88/02 08
86/02

HAMVENTION 86

As the February meeting approaches I would like to make a few observations and comments regarding the 1986 HAMVENTION. Would all members please consider the points that I am about to comment on and join in the discussion at the next meeting. We have to elect a new HAMVENTION committee and begin our advertising campaign soon.

(a) The 1985 convenor (Kevin VK3WN) has changed employment so will find it difficult to play a similar role in 1986. Therefore a new convenor will have to be selected.

(b) The 1985 dinner was poorly attended by club members. Do we have a Saturday dinner along the lines of previous years or do we have an informal get-together. If so, what form should it take and where should it take place?

(c) Last years bus trip was a financial disaster (i.e. very few bums on seats) Do we take the risk (around \$200.00) and have another or do we substitute another activity?

(d) Do we attract enough participants in the transmitter hunts etc? It seems all the active local operators were involved in organisational duties and were unable to participate. Do we have the right type of events? Do they need to be changed?

(e) How can we continue to attract Melbourne based and Western Zone amateurs?

(f) Could we ask other local hobby clubs to participate? i.e. Astronomical society, Car clubs, scout organisations, garden clubs, Historical society, camera club etc.

(g) Can we attract local (Ballarat and district) people to an exhibition and charge at the door with registered amateur participants paying a once only fee on the day. (as with the Geelong Expo some years ago)

These are a few points that I have thought of for discussion and I am sure that others will have many more they would like to talk about. The feedback I have received from well known amateurs in Melbourne is that it is a good day trip for them and their families and could become a fixture on their calendars providing there is plenty to do whilst they are here. If we can develop the HAMVENTION into an interesting broadly based function then I feel sure that the B.A.R.G. will be backing a sure winner and secure our financial future for years to come along with promoting this great hobby of ours.

See you at the meeting with lots of ideas!

73, Dick VK3VU

86/02

Ballarat Amateur Radio Group

VK3BML

HAMVENTION '85 BALANCE SHEET

P.O. BOX 216E
BALLARAT EAST, VICTORIA, 3350

REVENUE	\$	EXPENSES	\$
CASH AT BANK 1785	136.45	PRINTING KITARE TICKETS	35.00
RAFFLE (WENTHER PAIRING)	264.00	DUPPLICATING PAPER	30.50
DINNER SAT 82 @ 11.00	902.00	BARG ADVANCE (RAFFLE)	50.00
DONATION (LE KILL)	10.00	BARG ADVANCE SUNDAY FOOD	200.00
B.B.Q. SUNDAY 116 REGISTRARS	812.00	PETTY CASH ADVANCE	40.00
DONATIONS SUNDAY	42.00	SAT DINNER 81 MEALS 125 GUESTS	734.50
MIXED GOODS SOLD STICKERS ETC.	10.00	B.B.Q. MEAT (DOUG WHITE)	123.00
BUS FARES	24.00	PRE DINNER DRINKS. WESTERN HILL	48.00
		MIXED EXPENSES AS PER LIST K. HUGHES. INCLUDES TRUNK CARS.	150.00
		BUS HIRE SUNDAY	150.00
	2200.45		1566.00

TOTAL INCOME 2200.45

TOTAL EXPENSES. 1566.00

LESS ORIGINAL BANK 634.45
136.45

CLEAR PROFIT \$ 498.00

[Signature]
WJWN
85 CONVENTION

86/02

PUBLIC SERVICE

The real test

How do you schedule an emergency? It seems to me we should review what we do on Field Day. Perhaps we have our priorities a little out of order.

The cleanup efforts last year, at least, were not goal-oriented. I untangled and re-rolled several bunches of coax which resembled an oriole's nest. I have the impression that we should schedule a couple of emergencies to get things ready for Field Day!

Consider, for a moment, what Field Day is supposed to do for us. It does have goals. Field Day is an activity to bring together a group of individuals to form a team. This team is to see if they can prove their skills and equipment and can function in an emergency environment. It is fun, of course, but fun is a secondary goal. The ability to arrive at an area where an emergency exists, establish communications and provide needed services, is the name of the game when disaster strikes. Field Day only provides practice and training for this goal, and the fun comes from fellowship and doing things you like to do.

The parts of Field Day are: setting up, checking out, operating and tearing down. One of the most important parts is tearing down. When you just wad things up and leave them, how do you expect to be ready to go if an emergency arises between Field Days?

Field Day proves the equipment works or needs repair, but unless the items are put away properly, it is a total loss and a waste of time. Use care and role the coax properly. Make things neat. I know everyone is dead on their feet following the exercise, but this last effort can spell success or failure regardless of your operating score.

So there you have it. Not time to rest on your laurels yet, however. In spite of the good job you have now done in stowing everything, remember: it has to be sorted and labeled, too! — William Hulse, W5NI, from PHD NEWS

86/02

5/02 11

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